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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,362

06/13/2007

Karl Brotzmann

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INTELLECTUAL PROPERTY GROUP

FREDRIKSON & BYRON, P.A.

200 SOUTH SIXTH STREET, SUITE 4000

MINNEAPOLIS, MN 55402

EXAMINER

YANG, JIE

ART UNIT

PAPER NUMBER

1733

NOTIFICATION DATE

DELIVERY MODE

11/19/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/553,362	Applicant(s) BROTZMANN, KARL	
	Examiner JIE YANG	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-2 are amended, and claims 1-13 are pending in application. Claim 1 is an independent claim.

Status of the Previous Rejection

The previous rejection of claims 1 and 3 under 35 U.S.C. 102 (b) as being anticipated by Deloche et al (US 6,030,431, thereafter US'431) is withdrawn in view of the amendments filed on 9/29/2010.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US'431 in view of Galperin et al (US 5,417,740, thereafter US'740).

Regarding claim 1, US'431 teaches a method for improving energy input in heating and melting of scrap bulk (Abstract of US'431), which includes burning a channel into scrap bulk with oxygen-containing gas (abstract of US'431), adding fossil fuel (Col.2, lines 16-17), and inputting additional energy for the

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heating and melting of the scrap bulk (claim 1 of US'431).

Regarding the limitation of "hot blast", this limitation can be read as additional energy taught by US'431. The channel is formed in the upper area (Col.3, line 43), and US'431 specifies that: "In general, the gas introduction nozzles can be installed anywhere, but preferably are installed at least 30 cm above the bath surface--when using oxygen, at least 80 cm above the bath surface." (Col.3, lines 61-65 of US'431), which reads on the limitation of the hot blast being supplied from a top position as recited in the instant claim. US'431 does not specify a vessel having side and top walls and feeding hot blast to the scrap bulk from the top wall as recited in the instant claim. US'740 teaches a method for producing steel (Title and abstract of US'740). US'740 teaches vessel with side and top walls (Fig. 4 and 5 of US'740) and US'740 teaches blowing oxygen rich oxidizing gas from movable top lancing and charging the slag forming materials, coal, and additional carbon materials (Fig.4 and Col.13, line 32 to Col.18, line 25 of US'740), which reads on the wall structure and feeding hot blast from the top wall as recited in the instant claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the vessel structure of US'740 and to apply the hot blast from the top wall as demonstrated by US'740

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in the process of US'431 because US'740 teaches that: "...in order to provide for high productivity and efficiency of steelmaking processes utilizing solid ferrous metallic material and fuel consisting of hydrocarbons and solid carbon, it is important to protect the solid material from excessive oxidation during entire melting down cycle." (Col.3, line 67 to Col.4, line 4 of US'740).

Regarding claim 3, US'431 teaches two hot draft jets (Col.4, lines 3-4), which reads on the hot blast being divided into several separate jets as recited in the instant claim.

US'431 is further applied to the claims 2 and 11-13 for the same reason as stated in the previous rejection dated 3/30/2010.

Regarding claim 2, US'431 does not disclose that the hot blast supply occurs centrally from the top. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the hot blast supply centrally from the top because US'431 teaches: "In general, the gas introduction nozzles can be installed anywhere, but preferably are installed at least 30 cm above the bath surface--when using oxygen, at least 80 cm above the bath surface." (Col.3, lines 61-65 of US'431). Furthermore, US'740 teaches a method for producing steel (Title and abstract of US'740) and

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US'740 teaches blowing the hot blast onto the scrap bulk from a central top position (Fig.1-3 of US'740). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to blow hot blast from the central top position as demonstrated by US'740 in the process of US'431 because US'740 teaches that: "...in order to provide for high productivity and efficiency of steelmaking processes utilizing solid ferrous metallic material and fuel consisting of hydrocarbons and solid carbon, it is important to protect the solid material from excessive oxidation during entire melting down cycle." (Col.3, line 67 to Col.4, line 4 of US'740).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over US'431 in view of US'740 and further in view of JP 01219116 A thereafter JP'116.

US'431 in view of US'740 is applied to independent claim 1 as discussed above, US'431 in view of JP'116 is further applied to the claim 4 for the same reason as stated in the previous rejection dated 3/30/2010.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US'431 in view of Kundrat et al (US 5,702,502, thereafter US'502) and Hirai et al (US 4,334,921, thereafter US'921).

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US'431 in view of US'740 is applied to independent claim 1 as discussed above, US'431 in view of US'502 and US'921 is further applied to the claims 5 and 6 for the same reason as stated in the previous rejection dated 3/30/2010.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US'431 in view of Stercho (US 20020088102 A1, thereafter PG'102).

US'431 in view of US'740 is applied to independent claim 1 as discussed above, US'431 in view of PG'102 is further applied to the claims 7 and 8 for the same reason as stated in the previous rejection dated 3/30/2010.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US'431 in view of Hikosaka et al (US 4,908,059, thereafter US'059).

US'431 in view of US'740 is applied to independent claim 1 as discussed above, US'431 in view of 059 is further applied to the claims 9 and 10 for the same reason as stated in the previous rejection dated 3/30/2010.

Response to Arguments

Applicant's arguments filed on 9/29/2010 with respect to claims 1-13 have been fully considered but they are not persuasive. Regarding the arguments related to the amended features in the instant claims, the Examiner's position is stated as above.

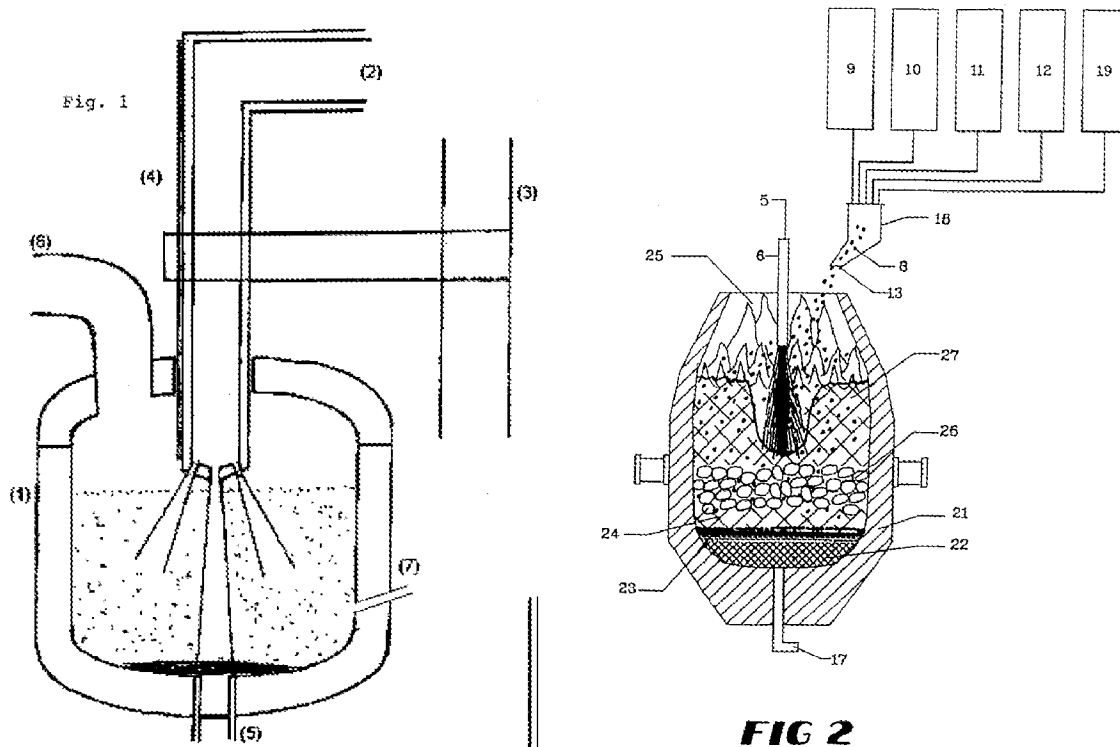
Applicant's arguments are summarized as follows:

A) Nearly horizontal hot blast jets may cause an undesirable stack-effect in the furnace. Applicant surprisingly discovered that this problem can be overcome by providing a hot blast directed into the scrap bulk from the top.

B) None of Tanioku, Kundrat, Hirai, Stercho, or Hikosaka, either taken separately or used combination, remedy the deficiency of Deloche.

Responses are as follows:

Regarding the arguments A) and B), as pointed out in the rejection for the instant claims above, US'740 teaches vessel with side and top walls (Fig. 4 and 5 of US'740) and US'740 teaches blowing the hot blast onto the scrap bulk from a central top position (Fig.1-3 of US'740), which is same operation as recited in the instant invention. The comparison figures between the instant invention and that of US'740 are listed in following.



US'740 discloses blowing the hot blast onto the scrap bulk from a central top position as recited in the instant invention, therefore a similar effect—avoiding the stack-effect in the furnace would be highly expected for the process of US'431 in view of US'740. MPEP 2112.01. Detail discussions and the motivation to combine US'740 to US'431 can refer to the rejections for the instant claims above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-270-1884. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY

/ Roy King/
Supervisory Patent Examiner, Art Unit 1733